

MONTANA DNRC Conversation

A Newsletter of the Department of Natural Resources and Conservation • Director Bud Clinch

Winter 2002

—RURAL WATER SYSTEMS—

Most of us can have an ample supply of good quality water just by turning the faucet's handle (and keeping the bill paid). There are places in Montana, though, where the look, or smell, or amount of water is not appealing, or healthful, or plentiful. Some sources are highly mineralized and/or extremely limited in quantity. Water has to be trucked to some communities.

Two rural water systems now in the planning stages would relieve the situation for thousands of Montan-

ans. Both have been proposed because the supply of high-quality drinking water is not sufficient. The purpose of each is to provide drinking water and water for livestock (but not for agricultural irrigation). The areas that would be served are shown in Figure 1 (see page 3).

One employee of DNRC's Conservation and Resource Development Division (CARDD) is working full-time to help make these systems a reality. Table 1

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—DEVELOPING SPRING PRAIRIE, aka SECTION 36—

Spring Prairie is a section (Section 36) of school trust land located on the northern edge of Kalispell. The current use of the property is mostly agricultural, although a portion is subject to a long-term lease with the City of Kalispell for sports fields. In recent years, it has become increasingly evident that the property is uniquely positioned for urban expansion, and the Northwestern Land Office (NWLO) is seeking to capture some of those opportunities. Some of NWLO's experiences could be applicable to other situations involving special use development of state-owned land.

Section 36 had been zoned "agricultural" for more than 10 years. To provide for urban development on this section, a whole series of processes was necessary to change the out-of-date zoning.

Since zoning must conform to the local Master Plan or Growth Policy, a plan amendment was necessary. NWLO chose to follow a neighborhood planning process to maximize community participation in selecting the future growth pattern for the property, and the resulting plan would be the basis for the zoning. The

Developing Spring Prairie. . . continued on page 5



PHOTO BY DAVID GREER

The Spring Prairie Tree provided horses with rest and shade along a historic wagon trail.

—A MESSAGE FROM THE DIRECTOR—

When I recently returned from several days on an out-of-state trip, I found it necessary to spend my morning reviewing the 58 e-mail messages that had accumulated. Such an exercise quickly reminds me of the endless variety of issues that we deal with across this agency. Quite successfully, also, I might add.

If you keep up on state agency happenings, you know that is not always the case with all agencies.

I feel very lucky to be associated with an agency that maintains a reputation of very effectively dealing with natural resource/people issues. While we all consider ourselves "natural resource professionals," the fact of the matter is we deal as much with "people" issues as with natural resources. Actually, natural resources are the easy and fun stuff that most often offsets the people aspect, and the reason we continue to do what we do. Nonetheless, we do it all.

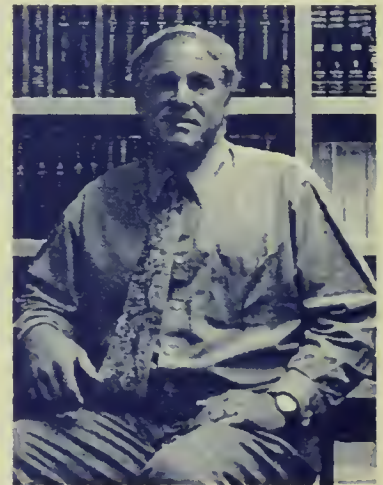
When I examine why we are successful, I believe it's entirely due to our approach. Whether it be a state-owned dam rehabilitation, a private timber sale inspection, a fiscal note response to the budget office, an oil or gas hearing, a RIT grant review, a tribal water claim, or a grazing lease cancellation, they all require a sensitivity to the people side of the matter. This begins with a thorough understanding of the issues, concerns, and ramifications of our actions. We start that process by learning all of the relevant facts, analyzing the situation, building relationships and partnerships, and involving the public. Inevitably, this approach leads to agency credibility and defensible actions.

We've been doing business in that fashion for years, long before it became known as "collaboration" or

"partnering." So, next time you're conducting a show-me tour on a proposed timber sale, or conducting a meeting of the Upper Clark Fork River Advisory Committee, or meeting with the Dry Prairie rural water users, or sitting in on the annual meeting of the Montana Water Resources Association, or speaking to the Park Conservation District supervisors, or responding to an inquiry from the Public Lands Council, or reviewing the interagency black-tailed prairie dog conservation plan, or providing assistance to the Northwest Regional RC&D, or instructing a course for the Ekalaka Volunteer Fire Department, or struggling to stay awake at a meeting of the USFS, BLM, NRCS, MRBA, USFWS, WSLCA, COE, EPA, or the ETC., relax and rest assured that you're carrying out the duties of a 21st century DNRC resource professional. You're "collaborating" or maybe even "partnering."

Keep it up. It's what makes us good and what makes you such a valuable asset to this agency. Thanks.

—BUD



Director Bud Clinch

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Rick Duncan,
CARDD's Regional
Water Systems
Coordinator

(see page 4) presents an overview of these two ambitious undertakings.

Benefits

For numerous individual water users and communities, the systems will provide an alternative supply of potable water with significantly better chemical quality than existing sources of groundwater and/or surface sup-

plies. This will result in reducing debilitating physical conditions or diseases that are either directly attributable to, or are aggravated by, drinking water with elevated levels of dissolved minerals.

The projects will also provide an opportunity for some existing public water supplies to receive water from new treatment plants that will meet existing and proposed U.S. Environmental Protection Agency (EPA) requirements for drinking water quality. In some instances, the systems will replace existing public water supplies that have substandard water treatment

Rural Water... continued on page 5

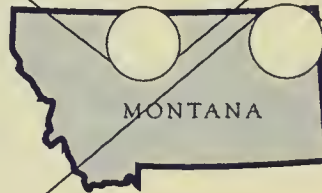
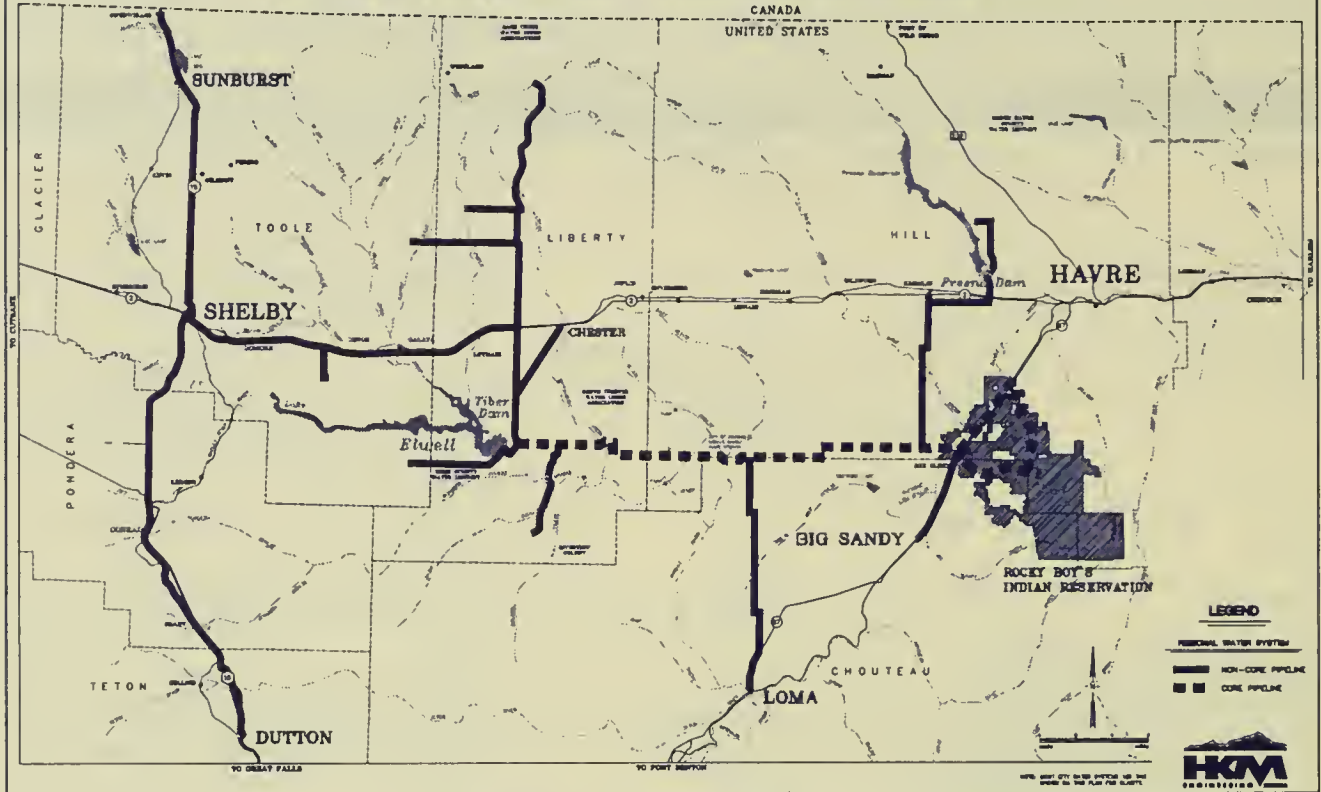
TABLE 1. OVERVIEW OF TWO PLANNED REGIONAL WATER SYSTEMS

FORT PECK RURAL WATER SYSTEM— DRY PRAIRIE		ROCKY BOY'S RURAL WATER SYSTEM— NORTH CENTRAL MONTANA
Authorization	The 106th Congress (Public Law 106-382) authorized the Fort Peck Rural Water System; Dry Prairie is the off-reservation portion of this system.	The 107th Congress is currently considering authorization of the Rocky Boy's Reservation Rural Water System; North Central Montana is the name of the "Non-Core" portion of this system. ¹
Population To Be Served	Approximately 28,000 persons (1990 Federal Census)	Approximately 18,000 people now (1995 figure); an estimated 30,000 at the end of 50 years
Geographical Area To Be Served	Communities and rural users within Sheridan, Daniels, Roosevelt, and the eastern half of Valley Counties in northeastern Montana, including the Fort Peck Reservation (Assiniboine and Sioux Tribes)	Communities, rural water districts, Hutterite colonies, and other rural users within Toole, Liberty, eastern Pondera, western Hill, northern Chouteau, and extreme northeastern Teton Counties in north central Montana, including the Rocky Boy's Reservation (Chippewa Cree Tribe)
Intake	In the Missouri River	In the area of Tiber Dam, within Lake Elwell on the Marias River
Treatment Plant	13-million-gallon-per-day plant to be located on the Fort Peck Reservation in the general vicinity of Poplar	20-million-gallon-per-day-capacity plant to be located adjacent to Tiber Dam in southwestern Liberty County
Distribution System	Nearly 3,200 miles of water supply main ranging from 2 inches in diameter in some of the outlying areas to 24 inches in diameter in the portion stretching from Poplar to Wolf Point	450 miles of transmission pipeline, which will connect with existing water supply mains. Water main sizes will range from 4 inches to 30 inches in diameter.
Sponsors	The Assiniboine and Sioux Tribes of the Fort Peck Reservation and the Dry Prairie Rural Water Authority	The Chippewa Cree Tribe of Rocky Boy's Reservation (for the "Core" portion) and the North Central Montana Regional Water Authority (for the "Non-Core" portion)
Water Rights	A portion of the existing Missouri River water rights allocated to the Assiniboine and Sioux Tribes	A portion of the existing water rights, as guaranteed to the Chippewa Cree Tribe of the Rocky Boy's Reservation under a settlement signed in December 1999 by President Clinton, may be utilized for the supply within the "Core" portion. Water rights for the "Non-Core" portion are yet to be negotiated.
Current Status	Work is intended in 2002, with the focus on obtaining the land where the water treatment plant is to be located and completing the design of that plant.	Members of Montana's delegation introduced project authorization legislation in both houses of the U.S. Congress in May 2001.
Schedule	Construction of the project, which may begin as early as federal Fiscal Year 2002, is expected to take at least 10 years.	Construction of the project, which may begin as early as federal Fiscal Year 2003, is expected to take 10 years, at a minimum.
Ownership, Operation, and Maintenance— Federally Funded Portion	The intake and water treatment plant, pipeline, and appurtenant facilities within the Fort Peck Reservation will be held in trust by the U. S. government on behalf of the Fort Peck Tribes. The U. S. Bureau of Indian Affairs, in cooperation with the Fort Peck Tribes, will supervise operation and maintenance of these portions.	The intake and water treatment plant at the location near Tiber Dam, the "Core" transmission line to the reservation, and the pipeline and appurtenant facilities within the reservation will be held in trust by the U.S. government on behalf of the Chippewa Cree Tribe of Rocky Boy's Reservation. The Secretary of the Interior will assign overall responsibility for the operation and maintenance of the "Core" portion to either the U. S. Bureau of Indian Affairs, or to the U.S. Bureau of Reclamation, in cooperation with the Tribe.
Ownership, Operation, and Maintenance— Intergovernmental Cost Share Portion	The Dry Prairie Rural Water Authority will own and operate the water mains and appurtenant facilities located outside of the Fort Peck Reservation.	The North Central Montana Regional Water Authority will own and operate the water mains and appurtenant facilities within the "Non-Core" portion (excluding the in-place infrastructure currently owned and operated by various communities, rural water districts, and colonies).

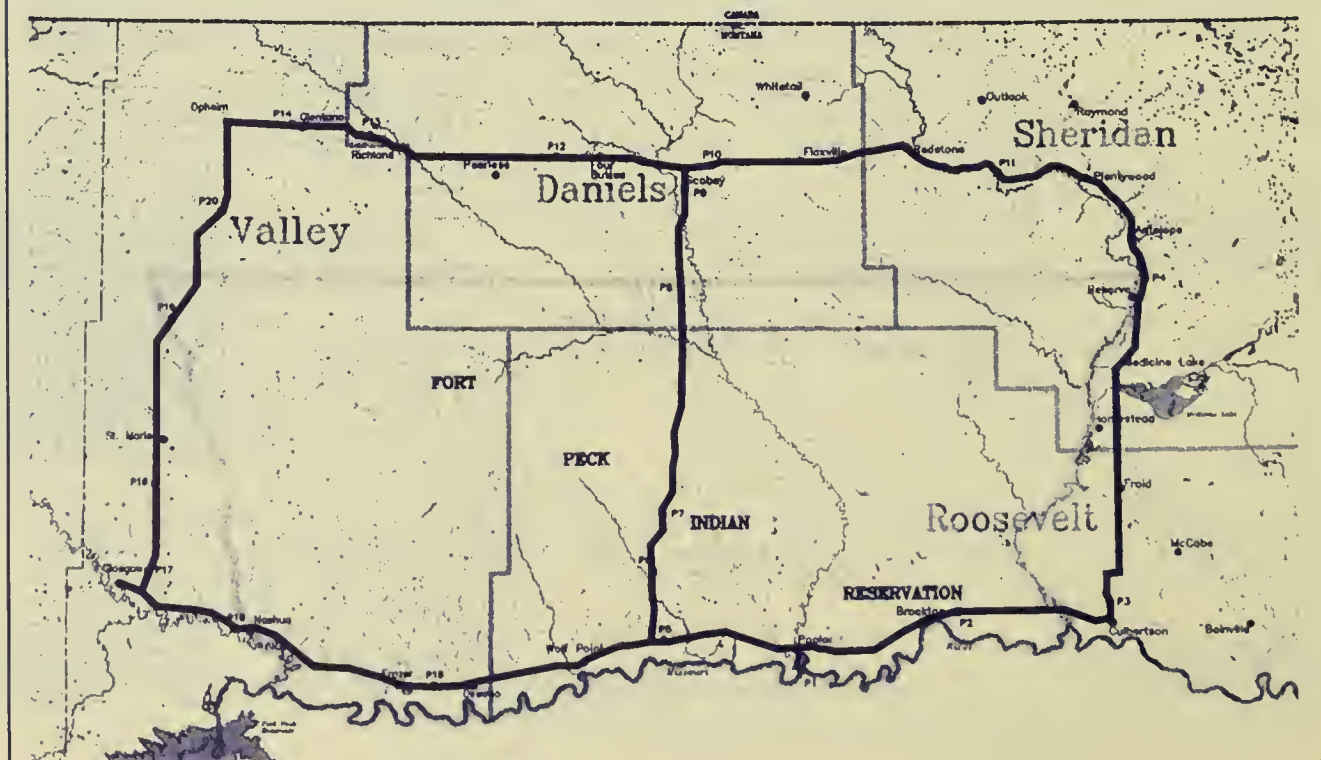
1. The "Core" portion consists of the Intake and water treatment plant near Tiber Dam, the transmission line to the reservation, and the pipeline and appurtenant facilities within the reservation's boundaries.

FIGURE 1. AREAS TO BE SERVED BY REGIONAL WATER SYSTEMS

ROCKY BOYS/NORTH CENTRAL MONTANA REGIONAL WATER SYSTEM



FORT PECK RURAL WATER SYSTEM



Rural Water. . . continued from page 2

facilities, or that will be faced with costly system upgrades in order to meet forthcoming EPA standards.

Livestock producers also stand to benefit. The proposed regional systems will allow for livestock watering throughout the rural service areas, where many existing sources are only marginally effective. The average weight gain per animal unit for beef cattle is projected to increase by 30 pounds when water from the regional systems becomes available.

With regard to prospective economic development, high-quality drinking water will provide an increased incentive for business and industry that would be reluctant to re-locate operations, or site new facilities, in an area with marginal to poor drinking water.

Management/Regulatory

A regional water authority, which is a duly constituted governmental agency, has been created for each system.

The Department of Environmental Quality (DEQ) has primacy within Montana for administration and enforcement of public water supply law administered by EPA under authority provided by the federal Clean Water Act. DEQ will classify the off-reservation portion of the Dry Prairie Project and the non-Core portion of the North Central Project to be "purchased water systems." A purchased water system is one that obtains its water from another source or supplier that is

also regulated, and whose product meets the minimum standard requirements.

The Bureau of Reclamation (USBR) of the U.S. Department of the Interior has been designated as the lead federal agency for the planning, design, and construction phases of the Dry Prairie Project and is expected to be so designated for the North Central Project, as well. Funds appropriated by the U.S. Congress would be channeled through USBR to the project sponsors.

Water Rights

Both systems are related to compacts negotiated by DNRC's Reserved Water Rights Compact Commission.

The Fort Peck Compact, which was approved by the Montana Legislature in 1985 and by the Montana Water Court in 2001, contains a provision for water marketing by the Assiniboine and Sioux Tribes. Federal approval is necessary for such marketing. That federal legislation has not yet passed.

The Rocky Boy's Compact allocates 10,000 acre-feet per year (AFY) to the Chippewa Cree Tribe from water arising on the reservation. The federal authorization includes 10,000 AFY from water stored in Tiber Reservoir. The compact was approved by Congress and has been submitted to the Montana Water Court for entry of a decree. Another article on page 6 of this newsletter also deals with the Rocky Boy's Compact.

Developing Spring Prairie . . . continued from page 1

planning effort was successful and eventually worked its way through the county and city approval processes.

After adoption of the Neighborhood Plan by the City of Kalispell and Flathead County, two organizations challenged the effort in court, citing the requirement for an analysis of the planning process under the Montana Environmental Policy Act (MEPA). The court agreed (although one consequence of the lawsuit was amendment of MCA 77-1-121 to exempt certain land use actions from MEPA). NWLO then prepared a detailed environmental impact statement (EIS) analyzing the likely effects of urban development of Section 36 on traffic, economics, utilities, and other identified issues. Concurrent with the EIS process for the plan was a MEPA analysis to evaluate a specific proposal for a "business and technology park."

The EIS process was followed by a zoning process, which included a detailed proposal for a Planned Unit Development (PUD) overlay for the property. The PUD identified three distinct land use development "pods" for the property, in addition to the existing sports field pod. Components of the PUD included clear definition of permitted uses, a requirement for architectural review, expectations for landscaping, extension of infrastructure, and phasing of development.

NWLO started the cooperative planning and zoning process in the spring of 1998. Annexation and zoning of the property were completed in December 2001. Continued cooperation with the City of Kalispell will be necessary to achieve the desired objectives for the entire property. Subdivision review will be required to

Developing Spring Prairie. . . continued on page 6

THE ROCKY BOY'S COMPACT and the NORTH CENTRAL PROJECT

Safe drinking water and a reliable domestic water supply were two of the main concerns of the negotiators working toward a settlement of the federal reserved water rights appurtenant to Rocky Boy's Indian Reservation. The negotiators included members of the Chippewa Cree Tribe, the Reserved Water Rights Compact Commission, and the U. S. Department of the Interior.

The Tribe originally proposed building reservoirs in the headwaters of all of the tributaries to Big Sandy Creek that originated on the reservation, including upper Big Sandy Creek. These reservoirs would have provided water for domestic uses as well as for agriculture.

A grassroots organization, the Bearspaw Resource Alliance, suggested an alternative to constructing small reservoirs on each of the Big Sandy Creek tributaries on the western flank of the Bearspaw Mountains. Approximately 50 miles west of the reservation is Lake Elwell, a reservoir formed by Tiber Dam on the Marias

River. A regional rural water system drawing water from Lake Elwell could benefit not only Tribal members of the Rocky Boy's Indian Reservation, but also non-Indians living in the area.

The reserved water rights compact was concluded in April 1997 and is codified at MCA 85-20-601. In the portion of the compact that spells out the "Contributions to Settlement," the State of Montana and the Tribe agreed to support federal legislation that would authorize and fund a municipal, rural, and industrial water system. They further agreed to support federal legislation that would establish an economic development fund. The compact has been submitted to the Montana Water Court for entry of a decree.

In December 1999, the 106th U. S. Congress approved the compact (Public Law 106-163). This law provided \$15 million dollars over three years for a future water supply system for the reservation. It also authorized \$3 million for economic development. Money

The Rocky Boy's Compact . . . continued on page 7

Developing Spring Prairie . . . continued from page 5

create lease lots, utilities will have to be sized in anticipation of future development, and a tiered MEPA review will apply to individual lease proposals.

DNRC is now negotiating a lease with a firm that proposes to build a business and technology park in Spring Prairie, which could start up in the spring of 2002. School District 5 remains interested in purchasing two easements for school sites. The Montana Department of Transportation is also negotiating with DNRC on the purchase of a highway bypass easement through the property. The outlook for other high value uses is excellent for both the near and the long term. The ultimate goal is securing millions of dollars in annual lease revenue for the school trust from development within Spring Prairie, in contrast to the less than \$60,000 expected in 2002 from the current uses.

Pursuing development of special uses on school trust lands need not be as complicated as it has been in the case of Spring Prairie. Some local governments are zon-

ing state-owned lands at a par with private land—that is, on the basis of their capability, rather than their ownership. DNRC intends to work with all local governments to follow regulations related to zoning, planning, and subdivision review. MEPA considerations must also be addressed in connection with each specific development proposal. Pursuing special use development of appropriate parcels of state-owned land is compatible with the objective of bringing higher income for the schools of Montana.



Softball fields on Section 36

PHOTO BY DAVID GREER

—USING ST. MARY RIVER WATER IN THE MILK RIVER BASIN—

Will Rogers once commented that, if you didn't irrigate the Rio Grande, it wouldn't flow. He was referring to what geographers call an "exotic stream" (one that shrinks as it goes downstream) and the dams built on the Rio Grande to meet water demands.

Mr. Rogers had a marvelous sense of humor, but his statement in the literal sense holds quite true of the Milk River. Many parallels can be drawn between the Milk and the Rio Grande rivers, including chronic water shortages, international treaties, endangered species, and Tribal water rights.

The Milk River Project is approaching 100 years old, and it continues to use much of the same infrastructure that was built by the U.S. Bureau of Reclamation (USBR) at the turn of the 20th century. The St. Mary portion of the project was a tremendous undertaking for that time—a trans-basin water supply,

powered only by gravity, built specifically for irrigation along the Milk River.

Sherburne Dam, near Many Glacier, captures snowmelt on Swiftcurrent Creek, a tributary to the St. Mary River. Some 150,000 acre-feet of water per year is diverted from the river (which is in the Hudson Bay drainage) into the St. Mary Canal and transferred 38 miles to the North Fork of the Milk River (which is in the Missouri River/Gulf of Mexico drainage). The water is conveyed 216 miles through Alberta before it re-enters Montana. It is regulated at Fresno Dam near Havre, flows by the Fort Belknap Indian Reservation, and provides irrigation water along the Milk River to its mouth near Nashua, 200 miles to the east (see Figure 2 on page 8).

THE MILK RIVER BASIN

	MILK BASIN	MONTANA	PERCENTAGE
Area (acres)	9,650,000	95,300,000	10.0 %
All Cattle (head)	250,000	2,500,000	10.0 %
Irrigation			
Total Milk River (acres)	125,000	1,455,000	8.5 %
Milk Project (acres)	110,000		7.6 %
Irrigated Hay Production (tons)	259,000	2,590,000	10.0 %

Although the St. Mary Project was originally built for irrigation, the water has come to be used for many purposes. As a source of municipal water, it supplies 15,000 people in eight communities, including Havre, Harlem, and Chinook. It benefits fisheries, recreation, tourism, and wildlife. During the drought in 2001, the

Using St. Mary . . . continued on page 8



PHOTO BY MIKE DAILEY

The left barrel has been removed from the outlet transition to replace damaged sections of pipe and repair concrete. The right barrel appears on the right side of the photo.

The Rocky Boy's Compact . . . continued from page 6

was appropriated for work on Bonneau Dam, East Fork Upper Beaver Creek Dam and Reservoir, Brown's Dam and Reservoir, and the Towe Ponds enlargement. The funds will be released when the Montana Water Court has finished its decree.

Federal legislation has provided an allocation of 10,000 acre-feet of water per year to the Tribe from storage in Lake Elwell. This water is not earmarked

for the rural water system, but such use might be an option.

Although the compact settling water rights for the Rocky Boy's Indian Reservation does not specifically address the funding and technical aspects of the North Central Montana Regional Water System, it did provide an opportunity for this project to be undertaken.

FIGURE 2. MILK RIVER BASIN

Life Line of the Hi-Line



MAP BY ROSS CAMPBELL

Using St. Mary . . . continued from page 7

water supply in the Milk basin was at 30 percent of the long-term average, and 97 percent of the water that was there originated in the St. Mary. Only 3 percent of the summer flows were natural, Milk basin runoff!

The importance of the water contributed by the St. Mary is obvious. However, although there are a variety of downstream uses and users today, operation and maintenance costs are borne primarily from assessments on the 666 farms irrigating 110,000 project acres, most of which are producing hay.

Keeping the St. Mary diversion facilities running from year to year is a challenge, because the project is aging and in disrepair. The siphon consists of two riveted steel, 90-inch diameter pipes that transverse down a valley slope from a concrete inlet, cross the St. Mary River, and then ascend the valley slope to a concrete outlet transition. The total length is approximately 3,205 feet, or a little over half a mile. Major repairs have taken place in 1924, 1935, 1940, 1954, and 1986. In 1999, major leaks were detected in the pipes and the seals around the outlet collars. The hillside became saturated, causing the pipes to slide and buckle.

DNRC's Conservation and Resource Development Division helped by providing two grants totaling \$311,000 for critical repairs, and the Milk River irrigation districts contributed \$200,000 in matching funds. This money will fund the replacement of approximately

100 feet of the siphon and keep the project running—for a little while. However, USBR estimates that rehabilitation of the St. Mary siphon project, including the concrete drop structures, pipes, and slope stability along the canal, will cost \$100 million.

Complicating matters, bull trout, listed as a threatened species, exist in the project area. USBR studies indicate that St. Mary diversion facilities are causing canal entrainment and impeding fish passage. One possible solution, installing a fish screen and ladder, could cost \$11 million; less expensive electronic fish barriers are being tested on the canal diversion.

Irrigators do not have the financial means to pay for the rehabilitation or modifications. Low value crops limit their ability to pay, and, if irrigators were the only possible source of funds, survival of the St. Mary Project would probably be in question. However, the economy of the hi-line was built around a stable water supply from the St. Mary, and there are 37,000 people living in the Montana portion of the Milk basin. Consequently, it is likely that the project's economic and social values (which, ironically, are sometimes at odds with irrigation) will ensure its survival.

Securing future water supplies from the St. Mary will involve political and legal considerations, as well as huge monetary costs.

Using St. Mary . . . continued on page 9

—FOREST MANAGEMENT AWARD—

Paul Engelman, who started working for DNRC only last April, has been awarded the Forest Management Bureau Excellence Award for 2001. Stationed in Missoula, Paul is the bureau's forest economist.



PHOTO BY BRUCE ROWLAND

Paul Engelman

During Paul's first six months on the job, he handled many complex assignments, including:

- Evaluating and revising a "transaction evidence appraisal equation" to determine minimum timber sale bids
- Preparing a Return on Asset Report required by statute and a Revenue/Cost Ratio Report for Fiscal Year 2001
- Writing draft rules for the Conservation License in Lieu of Timber Sale statute
- Chairing a committee charged with reporting state assets to the federal government in accordance with Standard 34 of the General Accounting Standards Board
- Serving on interdisciplinary teams dealing with timber sales
- Initiating several research projects to assess costs associated with the program

Paul is a graduate of Montana State University and the University of Wyoming, where he did post graduate studies. His previous experience includes working as an economist in Alaska and a consultant in Montana.

Good job!

Using St. Mary . . . continued from page 8

- Among other provisions of a recently concluded reserved water rights compact, 645 cubic feet per second from the natural flow of the Milk River is allocated to the Gros Ventre and Assiniboine Tribes of the Fort Belknap Reservation.
- Most of the St. Mary facilities are within the Blackfeet Indian Reservation. No compact has yet been negotiated with the Blackfeet Tribe to quantify its reserved water rights.
- The Canadians have not yet developed their share of the Milk River under the Boundary Waters Treaty of 1909. Generally speaking, during the irrigation season Canada is allocated one-quarter of the natural flow of the Milk if it is less than 666 cubic feet per second (cfs); if flows are higher, Canada is allocated one-quarter of the natural flow up to 666 cfs, plus one-half of the increment of flow that is greater than 666 cfs.

Flows are evenly divided between the two countries throughout the rest of the year.

With all of the anticipated expenses, political and jurisdictional issues, subtle nuances, and peripherals regarding the St. Mary, the future holds many uncertainties. The Milk River Project Joint Board of Control (JBC) will have a major influence on the project's destiny. JBC, which was organized in 1999, consists of representatives of the eight Milk River basin irrigation districts (Fort Belknap, Malta, Glasgow, Alfalfa Valley, Harlem, Zurich, Paradise, and Dodson Irrigation Districts). Who will pay, how much, and when, will be shaped by the levels of JBC's proactive involvement, solidarity, organizational strength, and vision.

In addition to JBC, the irrigation districts, and the irrigators, it will also take planning, active involvement,

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—INFORMATION SERVICES—

Elaine Huseby, information systems technician, started working for the Fire and Aviation Management Bureau in Missoula last July, and she recently ordered a business card. That card was a product of information services.

Al Christianson, assistant administrator of the Centralized Services Division in Helena, worked for the state for 25 years. When he retired in December, he got a certificate signed by the governor. That certificate was also a product of information services.

Between the mileposts of beginning and ending your career with DNRC, you may have many occasions to call on DNRC's information services staff, who are part of the Information Technology Bureau (ITB) in Helena. This article will acquaint you with the people and some of the services that are available.

Public Information

Contact Dan Bushnell, public information specialist, when you want to issue a news story, or explore ways to address questions that have been raised by your constituency or affected public, or just give your project or activities some public exposure. Dan can assist with public involvement campaigns, marketing, public relations or communications plans and strategies, public service announcements, news releases, newspaper display ads, and photography.

To issue a news release, you can submit a draft to Dan electronically, via fax, or through the mail, or he can interview you and write a draft for your review. He will then work with you on needed revisions, format and produce the final version, and arrange for distribu-

tion to the appropriate media. He also posts news releases on the department's website.

For public information assistance of any kind, just contact Dan at 444-0465.

Editing

Carole Massman, technical writer, can help with publications, from the planning through the printing.

Typically, subject matter specialists compose the first draft. Carole will edit and return a paper copy of the material with lots of red marks (on "mechanics," such as grammar, usage, and conventions) and blue marks (questions and comments on substantive matters, such as content and policy).

Many publications are edited only once. However, in the case of publications that have multiple authors, are sponsored by more than one agency, or are complicated or controversial, meetings may be necessary to make decisions and resolve problems, and the write/edit/review/revise cycle may be repeated several times.

When the content is final, Carole acts as liaison with the graphic designer and proofs the layout draft for misplaced headings, dropped text, bad breaks, "widows" and "orphans," and anything else that would detract from the quality of the publication. Once this reiterative process is complete, the document is ready to go to the author(s) for final approval and then off to the printer.

Graphic Design

ITB has two graphic design specialists, Don Howard and Janet Bukantis, who produce visual communication materials for DNRC. You've all seen examples of their work, because this *DNRC^onservation* newsletter is one of them.

Design and Layout of Publications

Janet and Don can help you take an idea from the conceptual stage through the finished product. They will tailor the design of a publication to the communication needs of the intended audience as well as the artistic taste of its creators. Design decisions include the look of the text (size and style of type, placement of headings, size of margins, number of columns, etc.) and the use and placement of graphic elements (photographs, artwork, maps, borders, etc.).

Information Services . . . continued on page 11



Information services staff (from left): Don Howard, Carole Massman, Janet Bukantis, and Dan Bushnell

Information Services . . . continued from page 10

The design is then executed by Don or Janet, who use Pagemaker to lay out the publication. Graphics done in Illustrator and PhotoShop may be incorporated. Numerous brochures, newsletters, flyers, and reports (such as the DNRC annual reports) all go through the layout process.

Display Products

Posters created by information services staff illustrate the functions of DNRC's divisions and decorate department offices all over the state. Conservation districts rely on posters created by Don and Janet to publicize the Governor's Range Tour, the Winter Grazing Seminar, and other annual events.

Maps are popular products, especially maps of state-owned land. The graphic designers have also produced maps and schematic drawings of most of the state-owned water projects, as well as maps and displays used as exhibits in court actions.

Banners and other paper products up to 3 feet wide and 100 feet long can be printed in color in-house.

Other Products

Here is a list of some of the products that Janet and Don create.

- Awards
- Banners
- Business Cards
- Certificates
- Charts
- Color Copies
- Decals, Stickers
- Floor Plans
- Graphs
- Logos
- Maps
- Name Tags
- Original Artwork
- Overhead Transparencies
- Signs
- Schematic Drawings
- Tent Cards

While there is no charge for the services of the graphic designers, it should be noted that not all of the products are free. The program requesting the product pays for any part that has to be sent out to private vendors, including the actual printing of publications and business cards, mounting of posters, and framing of certificates. A fee schedule has also been set for the color copies, posters, and banners that are produced in-house, to enable ITB to meet ongoing expenses for paper, toner, and equipment maintenance.

Internet

The Internet offers another area of information services work. Dan posts news releases and environmental documents on the DNRC website and maintains the DNRC employee page. Janet designed the Trust Land Management Division section and many of the DNRC and employee pages, and can assist with special projects.

* * * * *

Perhaps this overview has given you some ideas about how the DNRC information services staff can help you achieve your program goals. For public information assistance, contact Dan at 444-0465. Contact Carole at 444-6737 for publication and graphic design work. The information services staff—Dan, Carole, Don, and Janet—are here to help.



Don recently made
badges for the judges
at DNRC's chili fest.



DNRCConversation is an employee newsletter published quarterly by the Montana Department of Natural Resources and Conservation. Please send news articles or ideas for articles to your division liaison or to any member of the Editorial Board.

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(unless otherwise noted)

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cooperation, and coordination of all water users, sportsmen, municipalities, Tribal governments, and state and federal agencies to ensure the project's continued successful operation.

The Pueblo Indians settled along the Rio Grande around 700 years ago and built irrigation ditches called "acequias." Some of those ancient acequias are still in use today. Maybe in the year 2602, when the St. Mary diversion facilities are 700 years old, people will talk of the ancient ones who built St. Mary acequias that are still being used.



PHOTO BY MIKE DAILEY

The two 3,200-foot-long, 90-inch-diameter siphons that convey water across the St. Mary River are designed to handle 850 cfs.

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550 copies of this document were published at an estimated cost of \$0.71 per copy. The total cost of \$395.50 includes \$390.50 for printing and \$5.00 for distribution.

Montana Department of Natural Resources and Conservation



1625 Eleventh Avenue
P.O. Box 201601
Helena, MT 59620-1601

